

REVISION OF THE NORTHERN SOUTH AMERICAN TIPHIID GENUS  
*MERITHYNNUS* KIMSEY, 1991 (HYMENOPTERA: TIPHIIDAE: THYNNINAE)

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*Abstract.*—The South American genus *Merithynnus* is revised. Five **new species** from Colombia, *M. bilobatus*, *M. intermedius*, *M. montanus*, *M. nasalis* and *M. paradoxus*, are described. Of these species only *paradoxus* and *intermedius* are known from both sexes. The remaining species are based on males. Seven previously described species, three from Venezuela (*osorioi*, *pecki*, and *turbulentus*) and four from Colombia (*acuminatus*, *bogotanus*, *desertus*, and *mimulus*) are redescribed, and a distribution map and key to the species are provided. *Merithynnus desertus* is known only from the female and *acuminatus*, *bogotanus*, *mimulus*, and *turbulentus* are known only from males.

*Key Words:* *Merithynnus*, Thynninae, Elaphropterini, Colombia

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For a number of years Michael Sharkey, University of Kentucky, in collaboration with the Alexander von Humboldt Biological Resources Research Institute, Bogotá, has intensively collected Hymenoptera in parks across Colombia. This project has revealed a heretofore unknown fauna of wasp species, particularly in the tiphid subfamily Thynninae. Only two genera of Thynninae are recorded from Colombia, *Merithynnus* and *Aelurus* (Rhagigasterini). All of the Colombian thynnines in the tribe Elaphropterini belong to the genus *Merithynnus*. This study increases the number of known *Merithynnus* species from seven to twelve. Oddly, none of the previously described species from Colombia were represented in the material collected by Sharkey and the Humboldt Institute.

Prior to the study of *Merithynnus* in Colombia, the genus was known from fewer than 60 specimens, in most species just from the type series. Four of these, *acuminatus*, *bogotanus*, *desertus*, and *mimulus*, were described from Bogotá, Colombia.

The remainder of the previously described species, *osorioi*, *pecki*, and *turbulentus*, are from Venezuela. In the new Colombian material the type series of *paradoxus* alone is represented by more than 200 specimens. Although *Merithynnus* species are undoubtedly parasitoids, like other members of the family, nothing is known of the natural history of the genus.

#### MATERIALS AND METHODS

Specimens used in this study were borrowed from the following museums and institutions. Type depositions are indicated in the text by the city name of the respective museum in capital letters: BERLIN—Humboldt Museum, Humboldt-Universität, Berlin, Germany (F. Koch); BOGOTÁ—Alexander von Humboldt Biological Resources Research Institute, Bogotá, Colombia (D. Arias); BUENOS AIRES—Division Entomología, Museo Argentino de Ciencias Naturales, Buenos Aires, Argentina (M. J. Viana); CAMBRIDGE—Museum of Comparative Zoology, Harvard University, Cam-

bridge, Massachusetts, USA (P. Perkins); DAVIS—Bohart Museum of Entomology, University of California, Davis, USA (S. L. Heydon); GAINESVILLE—Florida State Collection of Arthropods, Gainesville, USA (L. A. Stange); LONDON—The Natural History Museum, London, England (S. Lewis); OTTAWA—Hymenoptera Section, Biosystematics Institute, Agriculture Canada, Ottawa (L. Masner); OXFORD—Hope Entomological Collections, Oxford University Museum, England (C. O'Toole). Primary types were studied for all species.

Modifications of the head, mesosoma and terminalia are most important to distinguish species. In females the shape of the prothorax, propodeum and pygidium are most significant. Diagnostic features of males include the configuration of different components of the face, body coloration, and the shape of the hypopygium, paramere and aedeagus. The terms terga and sterna are used to refer to segments of the metasoma. The slender, elongate, curved apex of the aedeagus is referred to below as the "apical strap." Puncture diameter, given in the text as PD, is used to describe the density of punctuation of the integument.

#### *Merithynnus* Kimsey

*Merithynnus* Kimsey 1991:74. Type species: *Merithynnus pecki* Kimsey 1991:75. Original designation.

Male.—Mandible bidentate, usually with small angle or tooth subbasally on dorsal margin; pronotal transverse anterior ridge laterally notched; scutellum with transversely septate groove along anterior margin; epipygium apically truncate to rounded, with lateral carina; hypopygium notched submedially, ligulate or horse hoof-shaped apically; paramere elongate, bending ventrally along longitudinal axis, with apical tooth or lobe bending toward midline volsella appressed against aedeagus, with short broadly rounded to slender, free apical lobe; aedeagal column short, often with large

ventral lobe or dorsal one, before apical strap, apical strap bending dorsally.

Female.—Mandible slender, edentate; propleuron elongate and strongly convex ventrally; scutum and metanotum obscured; scutellum elevated and ovoid dorsally; metasomal tergum I strongly narrowed anteriorly with short, often densely setose, anterior surface; tergum II with two strong transverse ridges, apical margin strongly upcurved; pygidium coarsely punctate, with lateral carina, usually with one or more apical lobes or teeth, tufts of setae laterally and one or more on the surface of the plate and on apical margin; sternum VI apical plate broadly ovoid or forming half circle.

Distribution.—Species of *Merithynnus* appear to be restricted to higher elevations of the northern reaches of the Andes in Colombia and Venezuela, in the Cordillera Oriental and Cordillera Merida (Fig. 1). None of the specimens examined for this study were found below 1,000 m and the majority of specimens were from between 2,000 m and 3,000 m in elevation.

Discussion.—The genus *Merithynnus* was described by Kimsey (1991) to include a variety of species, some of which were originally described in *Scotaena* and *Elaphroptera*. *Merithynnus* is characterized by a number of features, some shared with other members of the Tribe Elaphropterini, and some unique to the genus. Unique features include the configuration of the female pygidium, with lateral carina, irregularly sculptured posterior surface, 1–4 apical lobes or teeth, and two or more tufts of setae, male scutellum with septate, transverse anterior groove, male hypopygium apically hoof-like, lateral margin with submedial notch or indentation, and paramere apically bending inward. Females are only known for six species: *bogotanus*, *desertus*, *intermedius*, *osorioi*, *pecki*, and *paradoxus*. The female of *desertus* is undoubtedly synonymous with one of the other species described by Turner (1910) based on males from Bogotá, Colombia, but this cannot be resolved without collecting pairs in copula.

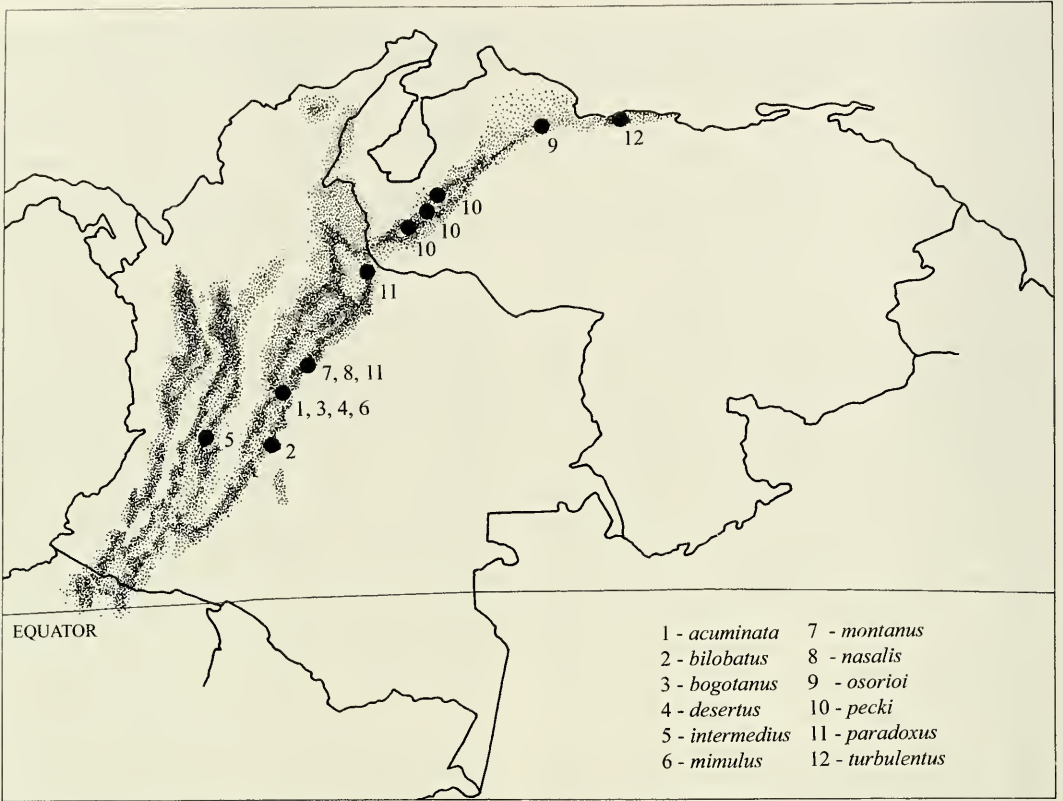


Fig. 1. Distribution map of *Merithynnus* species in Colombia and Venezuela.

The genus is redescribed in light of phylogenetic analyses of the genera of Thynninae currently underway.

KEY TO THE SPECIES OF *MERITHYNNUS*

- |   |  |
|---|--|
| 1. Wingless (female) . . . . .  | 2                                      |
| – Winged (male) . . . . .   | 6                                      |
| 2. Pronotal disk anteriorly trilobate (Fig. 32); pygidium with two subapical lobes or teeth between apical tufts of setae (Fig. 35); propodeum abruptly concave adjacent to metanotum (Fig. 32) . . . . .                                       | 11                                     |
| . . . . . <i>paradoxus</i> Kimsey, new species  |  |
| – Pronotal disk bilobate, convex or flat anteriorly (as in Figs. 24–25, 30, 37); pygidium emarginate or unilobate between apical tufts of setae (Figs. 29, 33–34); propodeum strongly convex adjacent to metanotum (Figs. 24, 25, 37) . . . . . | 3                                      |
| 3. Propodeum dorsomedially dentate (Fig. 30); metasomal sternum VI apically forming half circle (Fig. 34) . . . . .   | <i>osorioi</i> Kimsey                  |
| – Propodeum dorsomedially rounded (Figs. 24–25, 37); metasomal sternum VI apically semi-circular (as in Figs. 29, 33, 36) . . . . .   | 4                                      |
| 4. Pronotal medial disk strongly excavate, almost trough-like anteromedially, excavation planar with anterior collar (Fig. 24); pygidium with carina enclosed apical snout or plate (Fig. 33) . . . . .   | <i>intermedius</i> Kimsey, new species |
| – Pronotal medial disk convex or flattened, strongly to somewhat elevated above anterior collar; pygidium without carina enclosed apical snout or plate . . . . .   | 5                                      |
| 5. Propodeum saddled in profile (Fig. 37); pronotum with medial disk convex, strongly elevated above anterior collar (Fig. 37); pygidium apically quadrilobate (Fig. 36) . . . . .  | <i>pecki</i> Kimsey                    |
| – Propodeum convex in profile, not saddled (Fig. 25); pronotum nearly flat, medial disk only slightly elevated above anterior collar (Fig. 25); pygidium apically trilobate, with acute medial lobe (Fig. 29) . . . . .                         | <i>desertus</i> (Turner)               |
| 6. Clypeus with medial lobe, tooth or projection (as in Figs. 3, 10); metasoma with extensive orange or reddish markings . . . . .  | 7                                      |
| – Clypeus without medial tooth or projection (as in Figs. 4, 11); metasoma without orange or reddish markings, except <i>mimulus</i> . . . . .  | 9                                      |

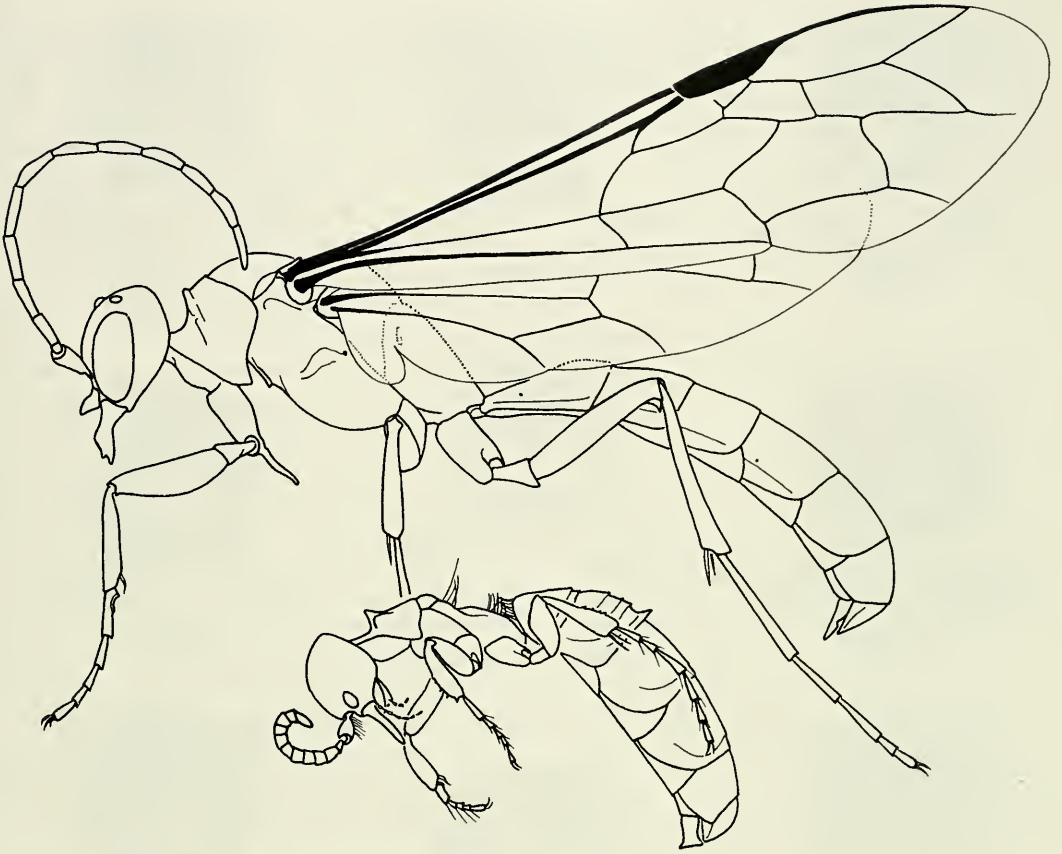


Fig. 2. Side view of male and female *Merithymus paradoxus*.

- 7. Forecoxa with elongate ventral spine (Fig. 13); clypeus apicomедial margin forming elongate, narrow, upcurved lobe (Fig. 10); antennal lobe sharply angulate apically (Fig. 10) ..... *paradoxus* Kimsey, new species
- Forecoxa without ventral spine; clypeal apicomедial margin unilobate, trilobate, or broadly truncate (as in Figs. 3–9, 11–12); antennal lobe rounded ..... 8
- 8. Clypeus apical margin with small medial lobe and small obtuse sublateral lobes (Fig. 3) ..... *acuminatus* (Turner)
- Clypeus apicomедially slightly produced and flat medially, with small acute to obtuse submedial angles (Fig. 8) ..... *nasalis* Kimsey, new species
- 9. Metasoma and legs extensively reddish; mandible broadest submedially (Fig. 6); clypeal apical projection with apex equal to distance between antennal sockets (Fig. 6) ..... *minulus* (Turner)
- Metasoma and legs without reddish coloration, black and yellow; mandible broadest subapically across subsidiary tooth (as in Fig. 9); clypeal apical projection with apex broader than (as in Figs. 9, 11) or less than half distance between antennal sockets (Fig. 4) ..... 10
- 10. Clypeus apicomедial projection with sides convex to lobate, apex narrowly bidentate (Fig. 4); forewing marginal cell more darkly stained, noticeably darker than rest of wing ..... *bilobatus* Kimsey, new species
- Clypeus apicomедial projection with sides straight to concave, apex broadly bilobate, flat, bidentate or indented (as in Figs. 7, 9, 11); forewing marginal cell at most slightly darker than rest of wing membrane ..... 11
- 11. Clypeus convex medially, rounded apicomедially; mandible broadest submedially; face with continuous yellow stripe along inner eye margin connecting behind ocelli, forming continuous stripe ..... *intermedius* Kimsey, new species
- Clypeus flat medially, apicomедially angulate, not rounded in front view; mandible broadest subbasally (as in Figs. 5, 9, 11); face

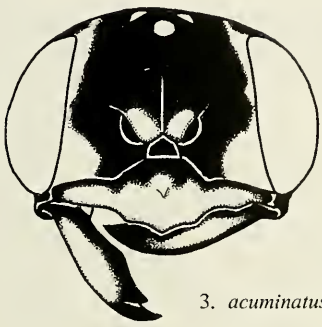
- with discrete yellow stripe along inner eye margin not extending beyond ocelli . . . . . 12
12. Clypeus with apicomedial angles obtuse to 90° (Figs. 7, 11); mandible slender, with small subapical tooth, broadest subbasally, without subbasal angle on inner margin (Figs. 7, 11) . . . . . 13
- Clypeus with apicomedial angles acute (Figs. 4, 10, 13); mandible with large subapical tooth, broadest submedially, with small subbasal angle on inner margin (Figs. 4, 10, 12) . . . . . 14
13. Clypeus flat in lateral view (Fig. 22); mandible without subbasal angle (Fig. 11); aedeagus with large ventral lobe before apical strap (Fig. 46) . . . . . *pecki* Kimsey
- Clypeus saddle-shaped in lateral view (Fig. 18); mandible with obtuse subbasal angle (Fig. 7); aedeagus without ventral lobe before apical strap (Fig. 52) . . . . . *montanus* Kimsey, new species
14. Clypeus apicomedial margin shallowly emarginate, with acute lateral angles (Fig. 9); propodeum finely shagreened; frons without yellow spot between ocelli . . . . . *osorioi* Kimsey
- Clypeus apicomedial margin deeply emarginate, with narrow, slightly up-turned lobes on either side (Fig. 12) or rounded (Fig. 5); propodeum highly polished; frons with yellow spot between ocelli . . . . . 15
15. Clypeus apicomedial projection with lateral margin obtuse or rounded (Fig. 5); face with complete yellow stripe along inner eye margin, extending to vertex behind ocelli; terga I–V with bright yellow stripe or spot; forewing marginal cell only slightly darker than rest of wing . . . . . *bogotanus* Kimsey
- Clypeus apicomedial projection with lateral margin straight (Fig. 12); face with two narrowly to well-separated yellowish spots along eye margin, dorsal spot barely extending to ocelli, not beyond; terga I–IV with small whitish lateral spot; forewing marginal cell markedly darker than rest of wing . . . . . *turbulentus* (Turner)

*Merithynnus acuminatus* (Turner)  
(Figs. 3, 14, 26, 38, 48)

*Elaphroptera acuminata* Turner 1910:194.  
Syntype males: Colombia: Bogotá (BERLIN).

Male.—Body length 14–15 mm. *Head* (Figs. 3, 14): Clypeus impunctate ventrally, dorsally punctures contiguous to 0.5 PD apart, with small medial tubercle, apical margin barely produced, with acute medial

lobe and obtuse submedial ones; area between antennal socket and inner eye margin with tiny punctures, punctures 1–3 PD apart; frons with punctures larger than lower face, nearly contiguous, somewhat elongate; vertex punctures smaller than frons, contiguous; hindocellus 3 hindocellar diameters from eye margin; flagellomere I 2.5× as long as broad; flagellomere II 3.5× as long as broad; flagellomere XI 6× as long as broad; mandible broadest medially, with long apical tooth, large subsidiary tooth and strong medial angle. *Mesosoma*: Legs unmodified; pronotal punctures tiny, 2–3 PD apart; scutal punctures 2–4 PD apart medially, becoming denser laterally, 0.5–1.0 PD apart; scutellar punctures 1–3 PD apart; metanotum polished, punctures 2–5 PD apart; propodeum densely, transversely shagreened, punctures obscure, 2–4 PD apart; mesopleuron densely, finely shagreened, punctures 1–2 PD apart. *Metasoma*: Finely shagreened, punctures tiny, 3–5 PD apart; epipygium lateral carina strongly produced; hypopygium ligulate, apically rounded, roughened dorsally (Fig. 26). *Genital capsule* (Figs. 38, 48): Paramere subtriangular, ventrally curved, tapering apically in lateral view, ventral surface strongly concave, broad, apically subtruncate, inner angle slightly hooked in dorsal view; aedeagus with large dorsal lobe. *Color*: Black, with yellow to red markings: clypeus ventrally yellow, antennal lobe yellow, mandibles mostly yellow, inner eye margin with yellow stripe extending to vertex, connecting to stripe extending from posterior eye margin; pronotum with broad, transverse medial yellow stripe, large yellow lateral spot; scutum with large, trilobate medial yellow spot, two small lateral spots and small yellow spot anteriorly on notaulus; scutellum with large yellow medial and smaller lateral spot; metanotum yellow medially and laterally; propodeum with broad U-shaped sublateral yellow spots, narrowly separated medially, interrupted laterally in some specimens, with yellow dorsolateral spot; mesopleuron with large, J-shaped, yellow



3. *acuminatus*



4. *bilobatus*



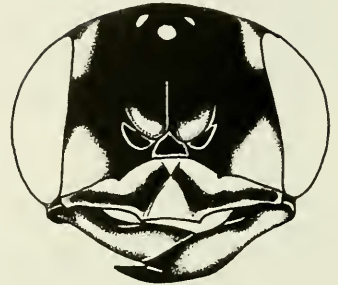
5. *bogotaensis*



6. *mimulus*



7. *montanus*



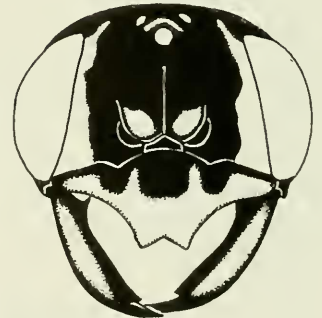
8. *nasalis*



9. *osorioi*



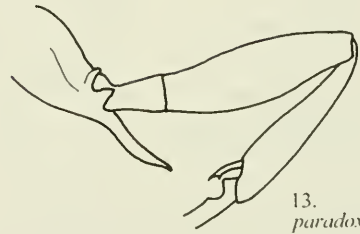
10. *paradoxus*



11. *pecki*



12. *turbulentus*



13. *paradoxus*

Figs. 3-13. 3-12, Front view of male face, antennae removed. 13, Male foreleg.

low dorsal spot and smaller ventral one; forecoxa anteriorly yellow; mid and hindcoxae yellow dorsally and laterally; fore- and midfemora yellow ventrally; tibiae, tarsi and hindfemur red to orange; metasomal tergum I yellow, with dark brown medial spot and subapical orange spots; segments II–IV primarily yellow, with orange basal markings and orange to dark brown apical markings; segment V blackish, with large, lateral, yellow spot; segment VI black, with lateral yellow tergal spot; epipygium dark brown, with basolateral yellow spot; wing membrane yellow-tinted, veins yellowish brown. *Vestiture*: Pale golden.

Female.—Unknown.

Material examined.—COLOMBIA: Bogotá (the type series).

Discussion.—Based on the coloration of the male and modifications of the male clypeus *acuminatus* is most similar to the new species *nasalis* and *paradoxus*, described below. All of these species have extensive orange coloration on the legs and metasoma, and the clypeus has a medial tooth or projection. *Merithynnus acuminatus* lacks the spined forecoxa and strongly elongate clypeus of *paradoxus*. It can be distinguished from *nasalis* by the clypeus having a single apicomедial lobe and obtuse sublateral ones.

***Merithynnus bilobatus* Kimsey,  
new species**

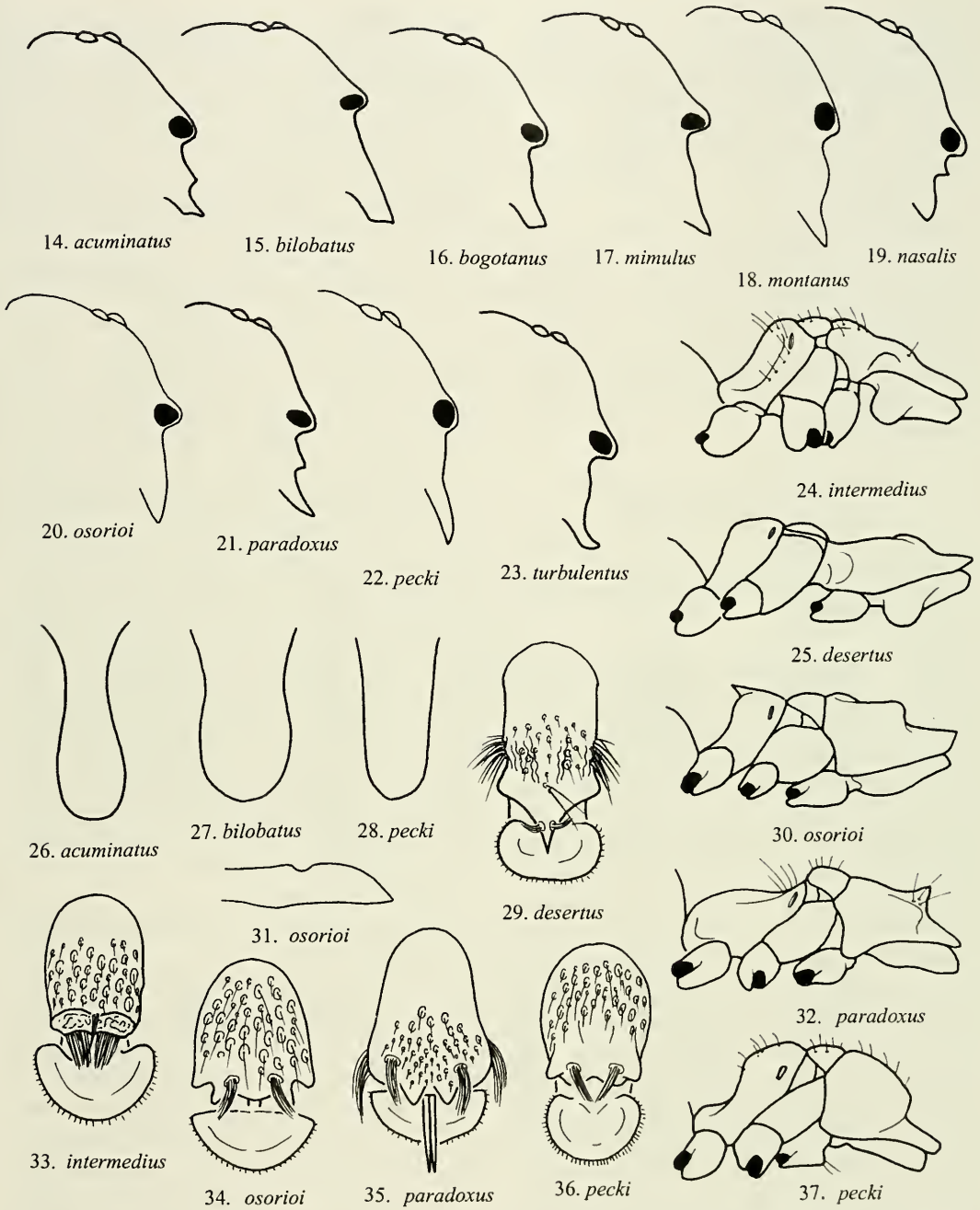
(Figs. 4, 15, 27, 39, 49)

Male.—Body length 10–14 mm. *Head* (Figs. 4, 15): Clypeus flat in side view, apicomедially elongate, with bilobate apex, side of elongation strongly convex, punctures sparse and 4–6 PD apart apically, becoming denser, 0.5–1 PD apart, dorsally and laterally; area between eye margin and antennal socket with dense small punctures, contiguous to 0.5 PD apart; antennal lobes evenly rounded; frons punctures larger than on lower face, 1–2 PD apart; vertex sparsely punctate, punctures small, 1–4 PD apart; hindocellus 3 ocellar diameters from eye margin; mandible with long apical tooth,

large submedial tooth and subbasal obtuse angle; flagellomere I 2.5× as long as broad; flagellomere II 3.5× as long as broad; flagellomere XI 6× as long as broad. *Mesosoma*: Pronotum weakly punctate, punctures minute, 3–8 PD apart; scutum polished, punctures 1–4 PD apart; scutellar punctures 1–4 PD apart, laterally, nearly impunctate medially; metanotum impunctate; propodeum finely shagreened, nearly impunctate posteriorly; mesopleuron with dorsal margin of scrobal sulcus bulging, punctures 1–2 PD apart; grooves above petiolar socket faintly septate; legs unmodified. *Metasoma*: Terga and sterna finely shagreened, punctures shallow, 1–4 PD apart; hypopygium broadly rounded apically, dorsal surface transversely wrinkled (Fig. 27). *Genital capsule* (Figs. 39, 49): Paramere slender, elongate, tapering apically in lateral view, broadened and slightly hooked in dorsal view, with submedially bulging inner margin; aedeagus with large dorsal lobe. *Color*: Black, with pale yellowish markings on lower two-thirds of clypeus, antennal lobe, base of mandible, face along eye margin with large spot ventrad and small spot dorsad, vertex with transverse stripe, often interrupted submedially, gena with large spot along lower eye margin, mandible pale yellow medially; pronotum with transverse submedial stripe and large lateral spot; scutum with small medial spot and lateral stripe; scutellum with two medial and one anterolateral spots; metanotum yellow medially, with anterolateral stripe; mesopleuron with comma-shaped dorsal spot, medial spot and posterior one; propodeum with lateral spot and submedial longitudinal stripes; coxae with dorsal spot, femora with ventral surface yellow; metasomal terga I–IV with lateral spot; wing membrane lightly brown-tinted, darkest in medial cell, veins dark brown, stigma yellowish brown medially. *Vestiture*: Long, sparse, silvery.

Female.—unknown.

Type material.—Holotype ♂: Caquetá Parque Nacional Natural, Cordillera de los



Figs. 14–37. 14–23, Side view of male face, antenna removed. 24, 25, 30, 32, 37, Side view of female mesosoma. 26–28, Apex of hypopygium, dorsal view. 31, Apex of hypopygium, side view. 29, 33–36, Posterior view of female metasomal segment VI.



Pichachos, 2°44N 74°53W, 1,560 m, Malaise trap, E. González, 1–7 Nov. 1997, No. 662 (BOGOTÁ). Paratypes: 4 ♂, same data as holotype (BOGOTÁ, DAVIS).

**Etymology.**—This species is named *bilobatus* in reference to the narrowly bilobate clypeus.

**Discussion.**—The most distinctive features of male *bilobatus* are the black and pale yellow coloration, clypeus with the medial projection apicomediaally narrowly bilobate and laterally convex to lobate, and the forewing marginal cell darker than the rest of the wing. The male clypeus appears flat in profile.

*Merithynnus bogotanus* (Turner)

(Figs. 5, 16, 27, 40, 50)

*Elaphroptera bogotana* Turner 1910:196.

Syntype males: Colombia: Bogotá (LONDON, BERLIN).

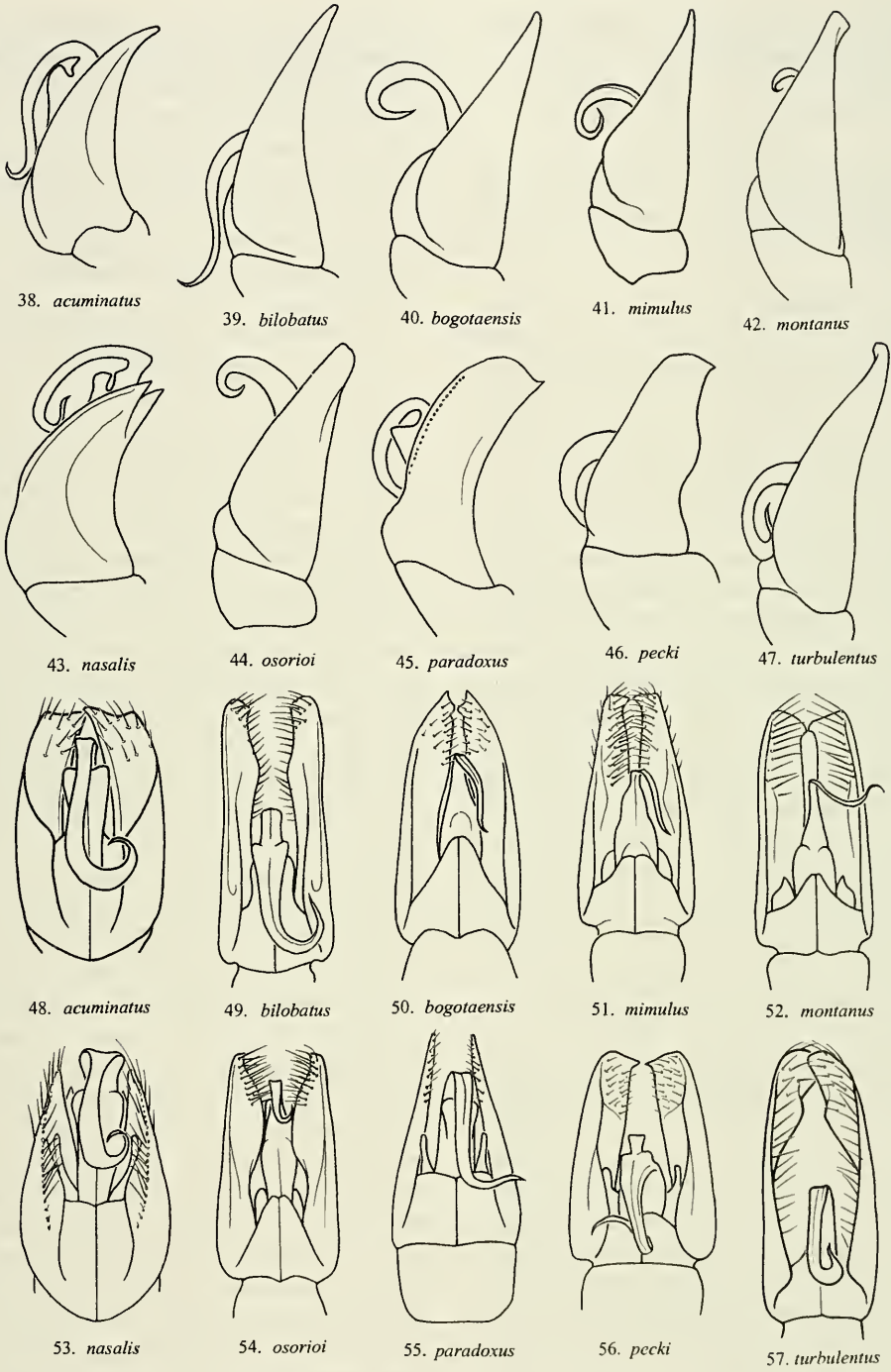
**Male.**—Body length 13–15 mm. **Head** (Figs. 5, 16): Clypeus nearly impunctate, strongly produced apicomediaally, apex sharply bidentate; area between antennal socket and eye margin with small punctures 0.5–1.0 PD apart; frons and vertex with punctures 0.5 PD apart; hindocellus three hindocellar diameters from eye margin; flagellomere I 2.5–2.6× as long as broad; flagellomere II 3× as long as broad; flagellomere XI 5.0–5.3× as long as broad; mandible medially and subbasally angulate, broadest submedially, with long acute apical tooth, and smaller subsidiary tooth. **Mesosoma:** Pronotum polished, nearly impunctate; scutum polished, punctures 1 PD apart; scutellum impunctate medially, punctures 1–2 PD apart laterally and anteriorly; metanotum impunctate; propodeum with small punctures 3–4 PD apart, nearly impunctate above petiolar socket; mesopleuron polished, punctures 1–2 PD apart. **Metasoma:** Integument densely, finely shagreened, punctures shallow, 1–4 PD apart; hypopygium apically broadly rounded, with dorsal surface irregularly wrinkled (Fig. 27). **Genital capsule** (Figs. 40, 50): Para-

mere slender, elongate and tapering apically in lateral view, broadened and slightly hooked apically in dorsal view; aedeagus without dorsal lobe, one-half or more as long as paramere. **Color:** Black, with yellow markings; clypeus yellow, except apicomediaal spot and around tentorial pits, inner eye margin with yellow stripe extending to hindocellus, antennal lobe yellow, mandible yellow medially, posterior eye margin with yellow stripe along lower three-fourths, vertex with transverse yellow stripe; pronotum with transverse medial yellow stripe, interrupted medially, and large lateral yellow spot, scutum with posteromedial yellow spot and yellow lateral stripe, scutellum with two large medial and lateral yellow spots, metanotum yellow medially and laterally, propodeum with large U-shaped yellow sublateral spot; forecoxa ventrally yellow, mid and hindcoxae with dorsal and ventral yellow spot; femora with yellow ventral stripe, rest of legs black; metasomal tergum I with large, irregular U-shaped yellow spot, segments II–IV with large lateral tergal and sternal yellow spots, tergum V with large lateral yellow spot; wing membrane faintly brown, veins brown. **Vestiture:** Silvery.

**Female.**—unknown.

**Material examined.**—Colombia: Bogotá (2 syntype males).

**Discussion.**—*Merithynnus bogotanus* and *turbulentus* are similar in coloration and overall appearance in the males. Male *bogotanus* can be distinguished by the shape of the clypeus, and the more extensive yellow markings. The male clypeus has the apicomediaal margin obtuse or rounded, and the face has a complete yellow stripe that extends along the inner eye margin from the clypeal margin to beyond the hindocellus in *bogotanus*. In *turbulentus* the clypeus apicomediaal margin is straight and the yellow stripe along the inner eye margin barely extends to the ocelli. In addition, the marginal cell in *bogotanus* is only slightly darker brown than the rest of the wing;



Figs. 38-57. 38-47, Male genital capsule; side view (left). 48-57, Dorsal view (right).

whereas the marginal cell in *turbulentus* is conspicuously darkened.

*Merithynnus desertus* (Turner)  
(Figs. 25, 29)

*Elaphroptera deserta* Turner 1910:199.  
Syntype females; Colombia: Bogotá  
(BERLIN).

Male.—Unknown.

Female.—Body length 7–8 mm. *Head*: Mandible long, slender, edentate; frons and vertex with punctures 0.5–1.0 PD apart, vertex with long seta from each puncture; scape ventrally with row of stout erect setae. *Mesosoma* (Fig. 25): Pronotum with anterior collar half as long as elevated disk, disk strongly depressed along notauli anteriorly, posteriorly deeply sunken medially, integument finely shagreened, punctures 1–2 PD apart; propleuron markedly convex ventrally; scutellum conspicuously elevated above pronotum, ovoid, with contiguous punctures; scutum and metanotum barely visible dorsally; propodeum dorsal surface about as long as scutellum, markedly declivous posteriorly, without long erect setae. *Metasoma*: Tergum I rounded anteriorly, without dense, erect, long setae, with transverse subapical row of pits; tergum II with transverse, broadly U-shaped, submedial carina, followed by large transverse subapical ridge, coarsely sculptured between, posterior margin flared; terga III–V transversely, finely wrinkled, punctures obsolescent, with subapical, broadly W-shaped transverse groove before flat, smooth apical rim; apical surface of tergum VI carina-edged, carina sharply angulate, with lateral brush of setae, apicomediaally with acute tooth, with a short tuft of setae on either side, with medial longitudinal row of setae (Fig. 29). *Color*: Yellowish brown to dark brown.

Material examined.—COLOMBIA: Bogotá (only the holotype of *deserta* was seen).

Discussion.—The male is unknown for *deserta*. It is most likely that the male is

one of the three *Merithynnus* described by Turner (1910) from Bogotá: *acuminatus*, *bogotanus* and *mimulus*. The collector and locality labels are identical among the type series of these species. The female of *deserta* can be immediately distinguished from other female *Merithynnus* by the apicomediaal tooth on the pygidium and the posteromedially depressed pronotum.

*Merithynnus intermedius* Kimsey,  
new species  
(Figs. 24, 33)

Male.—Body length 12 mm. *Head*: Clypeus convex medially, strongly produced apicomediaally, apex rounded, sides concave, nearly impunctate medially and apically, dorsally with dense, nearly contiguous punctures; area between antennal socket and eye margin with small punctures 0.5–1.0 PD apart; frons and vertex punctures 0.5–1.0 PD apart, punctures smaller on vertex; hindocellus 2.8–3.0 ocellar diameters from eye margin; flagellomere I 2.5–2.6× as long as broad; flagellomere II 3× as long as broad; flagellomere XI missing; mandible with long acute apical tooth, medially with smaller subsidiary tooth, subbasally angulate, broadest submedially. *Mesosoma*: Pronotum polished, nearly impunctate; scutum polished, punctures 1 PD apart; scutellum impunctate medially, laterally punctures 1–2 PD apart; metanotum nearly impunctate; propodeum finely shagreened medially, with small punctures 2–3 PD apart, punctures smaller and 1–2 PD apart laterally; mesopleuron polished, punctures 2–4 PD apart. *Metasoma*: Integument densely, finely shagreened, punctures shallow, 2–4 PD apart; hypopygium missing. *Genital capsule*: Missing. *Color*: Black, with yellow markings; clypeus yellow, except along dorsal margin, inner eye margins with yellow stripes meeting behind hindocellus, antennal lobe yellow, mandible yellow medially, posterior eye margin with large U-shaped, yellow stripe along lower four-fifths; pronotum with transverse medial yellow stripe, interrupted medially, and

large lateral yellow spot, scutum with posteromedial yellow spot and yellow lateral stripe, scutellum with one large medial and one lateral yellow spot, metanotum yellow medially and laterally, propodeum with large U-shaped yellow sublateral spots; coxae dorsally yellow; femora with yellow ventral stripe, rest of legs black; metasomal tergum I with large, irregular U-shaped yellow spot, tergum II with transverse medial yellow stripe; terga III–V with lateral yellow spot; sterna II–III each with small lateral yellow spot; wing membrane yellow-tinted, veins brown. *Vestiture*: Silvery.

Female.—Body length 9 mm. *Head*: Mandible long, slender, edentate; frons with ovoid depression adjacent to upper inner eye margin; frons and vertex with punctures 1–3 PD apart, frons with long seta from each puncture; scape ventrally with row of stout, erect setae. *Mesosoma* (Fig. 24): Pronotum flattened, with anterior collar more than half as long as elevated disk, disk strongly depressed, trough-like anteromedially, floor of depression planar with anterior collar, integument polished, with punctures 2–3 PD apart posteriorly, nearly impunctate anteriorly; propleuron strongly bulging ventrally and laterally; scutellum elevated above pronotum, ovoid, with punctures 1–3 PD apart; scutum and metanotum barely visible dorsally; propodeum dorsal surface about as long as scutellum, markedly concave posteriorly, conspicuously angled laterally, with long, erect setae dorsally and laterally; forecoxa narrowly attached to prothorax (Fig. 24). *Metasoma*: Tergum I markedly narrowed anteriorly, with dense, erect, long setae, with transverse subapical row of pits; tergum II with transverse, broadly U-shaped, submedial carina, followed by large transverse subapical ridge, shagreened between, posterior margin flared; terga III–V transversely, finely wrinkled, punctures obsolescent, with subapical, broadly W-shaped transverse groove before flat, smooth apical rim; apical surface of tergum VI with narrow carina-edged enclosure, dorsal carina indented

medially, with narrow, medial brush of setae, ventral edge with broad, short medial brush of setae (Fig. 33). *Color*: Yellowish brown to dark brown, facial depressions pale.

Type material.—Holotype male and paratype female; COLOMBIA: Cundinamarca Prov., Monterredondo, Jan. 1959, 1,420 m, Forester (DAVIS).

Etymology.—The name is chosen to indicate the intermediate nature of structural features of the male between *montanus* and *pecki*.

Discussion.—*Merithynnus intermedius* most closely resembles *montanus* and *pecki*, based in the male on the black and yellow coloration, the clypeus without a medial projection and apicomediaally drawn out into an elongate lobe. It can be distinguished from these two species by the apically rounded clypeal projection, clypeus convex in side view (not flat or concave), face with complete yellow stripe extending behind the hindocelli, and scutum and scutellum with a single large yellow spot (two on both structures in *pecki*, and two only on the scutellum in *montanus*). Females can be distinguished by the deeply medially impressed pronotum, strongly bulging propleuron and narrowly attached forecoxa.

*Merithynnus mimulus* (Turner)  
(Figs. 6, 17, 41, 51)

*Elaphroptera mimula* Turner 1910:197. Holotype male; Colombia: Bogotá (BERLIN).

Male.—Body length 12–15 mm. *Head* (Figs. 6, 17): Clypeus concave medially, with elongate narrow apicomediaal truncation, truncation apex equal to or narrower than distance between antennal sockets, punctures 1–3 PD apart medially, becoming denser along dorsal margin; vertex and frons with punctures contiguous to 0.5 PD apart, punctures smaller along lower eye margin than above antennal sockets; hindocellus 2.5 ocellar diameters from eye margin; flagellomere I 2.5× as long as

broad; flagellomere II  $3\times$  as long as broad; mandible broadest submedially, with one large subapical tooth. *Mesosoma*: Pronotum sparsely punctate, punctures 1–3 PD apart; scutal punctures larger than pronotal, 0.5–1.0 PD apart; scutellar punctures 2–3 PD apart; metanotum impunctate; propodeum polished, with small punctures, nearly impunctate above petiolar socket, becoming more densely punctate laterally, punctures 1–2 PD apart; mesopleuron polished, punctures small, 2–4 PD apart. *Metasoma*: Segments finely, densely shagreened, punctures shallow, 1–2 PD apart; hypopygium apex rounded, dorsal surface finely and densely rugose. *Genital capsule* (Figs. 41, 51): Paramere slender, elongate and tapering apically in lateral view, broadened and slightly hooked in dorsal view, with submedially bulging inner margin; aedeagus without dorsal lobe. *Color*: Head and mesosoma black, with yellow markings, metasoma red, with yellow and black markings, legs red; clypeus ventrally yellow, antennal lobe with large yellow spot, one large and one small yellow spot along inner eye margin, posterior eye margin with yellow stripe basally, vertex with transverse yellow stripe interrupted medially, mandible yellow medially; pronotum with transverse medial yellow stripe and lateral yellow spot, mesopleuron with one dorsal and two ventral yellow spots, scutum with yellow postero-medial spot and lateral stripe, scutellum with two medial and one lateral yellow spot, metanotum medially yellow, with lateral yellow stripe, propodeum with sublateral U-shaped yellow, orange or red spot; metasomal tergum I blackish basally, with subapical transverse yellow stripe, interrupted medially in some specimens, segments II–IV each with large lateral yellow spot, tergum V blackish basally and apically, terga VI–VII and sterna V–VII dark brown to black; wing membrane yellow-tinted, veins yellowish brown to dark brown. *Vestiture*: Long, pale golden.

Female.—Unknown.

Material examined.—COLOMBIA: Bogotá (only the type specimens were seen).

Discussion.—*Merithynnus mimulus* is the only species in the male with red coloration on the legs and metasoma that lacks a medial tooth or projection on the clypeus. All of the other *Merithynnus* species with red coloration have a medial clypeal tooth. In addition, the apex of the apicomedial extension of the clypeus is narrow, as wide as the distance between the antennal sockets. In *montanus*, *acuminatus*, *nasalis*, *osorioi* and *pecki* the apex is broader than the interantennal distance. The shape of the paramere and aedeagus resembles those of *botanulus*.

*Merithynnus montanus* Kimsey,  
new species

(Figs. 7, 18, 42, 52)

Male.—Body length 12–17 mm. *Head* (Figs. 7, 18): Clypeus slightly bulging dorsally, concave medially, broadly subtruncate apicomedially, apical margin of truncation indented, punctures sparse and 4–6 PD apart apically, becoming denser dorsally and laterally, 0.5–1 PD apart; area between eye margin and antennal socket with dense small punctures, 1 PD apart; antennal lobes evenly rounded; frons punctures larger than on lower face, contiguous to 0.5 PD apart; mandible with subapical tooth and broadly obtuse subbasal angle on inner margin; vertex with punctures 0.5–1.0 PD apart; hindocellus 2.5 ocellar diameters from eye margin; flagellomere I  $2.5\times$  as long as broad; flagellomere II  $3.5\times$  as long as broad; flagellomere XI  $6\times$  as long as broad. *Mesosoma*: Pronotum nearly impunctate; scutal punctures 1–2 PD apart; scutellum sparsely punctate, punctures 1–4 PD apart, nearly impunctate medially; metanotum impunctate; propodeum polished, punctures 2–4 PD apart, except impunctate above petiolar socket, grooves above petiolar socket conspicuously septate; mesopleuron with dorsal margin of scrobal sulcus bulging, punctures 1–2 PD apart, posteriorly finely shagreened; legs unmodified. *Metasoma*:

Terga and sterna finely shagreened, punctures shallow, 1–4 PD apart; hypopygium broadly rounded apically, dorsal surface transversely wrinkled. *Genital capsule* (Figs. 42, 52): Paramere slender, elongate, tapering apically in lateral view, broadened and slightly hooked in dorsal view, with submedially bulging inner margin; aedeagus without dorsal lobe. *Color*: Body black, with yellow markings; clypeus yellow except around tentorial pits, mandibles yellow medially, antennal lobes yellow; eye surrounded by yellow stripe, except posteriorly near vertex, posterior stripe with branch extending across vertex, interrupted submedially; pronotum with transverse medial yellow stripe and large lateral yellow spot, scutum with yellow medial spot and lateral stripe; scutellum with two medial and one lateral yellow spot; metanotum yellow medially and laterally, mesopleuron with three large yellow spots, propodeum with large comma-shaped sublateral stripe and lateral spot, coxae with anterior yellow spot; femora with ventral yellow stripe, metasomal terga I–V and sterna I–IV each with irregular lateral yellow spot; wing membrane brown-tinted, veins dark brown. *Vestiture*: Sparse and silvery.

Female.—Unknown.

Type material.—Holotype ♂, COLOMBIA: Boyacá Santuario de Flora y Fauna, Iguaque Cabaña Chaina, 5°25'N 73°27'W, 2,600 m, Malaise trap, 17 May–5 Jun. 2001, P. Reina, No. M1758 (BOGOTÁ). Paratypes: 14 ♂; 3 ♂: same data as holotype: 5 ♂: 30 Apr.–17 May 2001, No. M1753; 6 ♂: 21 Jun.–6 Jul. 2001, No. M1971 (BOGOTÁ, DAVIS).

Etymology.—The species is named after the collection site in montane Colombia.

Discussion.—Among the species that lack reddish coloration and lack a medial clypeal projection in the male two species, *montanus* and *pecki*, have the apicolateral angles of the clypeal projection forming a right to obtuse angle, as opposed to acute. *Merithynnus montanus* can be distinguished in the male from *pecki* by the saddle-shaped

clypeus (seen in profile) and aedeagus without a ventral lobe before the apical strap.

*Merithynnus nasalis* Kimsey,  
new species

(Figs. 8, 19, 43, 53)

Male.—Body length 14–17 mm. *Head* (Figs. 8, 19): Clypeus polished, impunctate, except along dorsal margin (punctures small, nearly contiguous), apicomediaally truncate, with broad flattened triangular area below medial tooth or projection; antennal lobes rounded; mandible broadly angulate medially, with long apical tooth and smaller subapical one; area between eye margin and antennal socket with dense small punctures, 1 PD apart; antennal lobes angulate; frons finely shagreened, punctures larger than on lower face, contiguous to 0.5 PD apart; vertex finely shagreened, with punctures 0.5–1.0 PD; hindocellus 2.5 ocellar diameters from eye margin; flagellomere I 2.5–2.0× as long as broad; flagellomere II 3.5× as long as broad; flagellomere XI 6× as long as broad. *Mesosoma*: Pronotum without transverse anterior carina, finely shagreened, punctures tiny, 1–3 PD apart; scutal punctures 1–4 PD apart medially, nearly contiguous laterally; scutellum nearly impunctate medially, 1–2 PD apart laterally; metanotum impunctate; propodeum finely shagreened, punctures 2–4 PD apart, except impunctate above petiolar socket, petiolar grooves smooth, without septa; mesopleuron finely shagreened, dorsal margin of scrobal sulcus not bulging, punctures 1–2 PD apart; legs unmodified. *Metasoma*: Terga and sterna finely shagreened, punctures shallow, 2–4 PD apart; hypopygium narrowly ligulate apically, dorsal surface irregularly sculptured. *Genital capsule* (Figs. 43, 53): Paramere less than twice as long as broad, bending ventrally, ventral half concave, apically bidentate in dorsal and lateral views, with submedially bulging inner margin, marked by conspicuous row of pits; aedeagus short, with heavily sclerotized dorsal lobe, apical lobe with small, membranous lateral lobe. *Color*: Black,

with yellow markings, and red on legs and metasoma, clypeus with yellow stripe along apical margin extending dorsally over medial projection, mandible yellow medially; antennal lobe with yellow spot; inner eye margin with two spots, posterior eye margin with basal yellow stripe extending dorsally from eye margin near midpoint to vertex; pronotum with broad transverse yellow stripe and large lateral spot; scutum with medial stripe and two small lateral spots; tegula yellow; scutellum with large medial and small anterolateral yellow spots; metanotum yellow medially; propodeum with large U-shaped sublateral stripe; mesopleuron with dorsal U-shaped yellow spot and posterior yellow spot; coxae with anterior yellow spot; femora with ventral yellow stripe; forefemur blackish red to black, mid and hindfemora red; tibiae red; tarsi red to yellow; metasomal terga and sterna with large, irregular yellow spot; tergum I blackish basally; tergum V black, with large yellowish lateral spot, sternum V black, with small lateral yellow spot; segments VI, VII blackish; wing membrane yellow-tinted, veins brown. *Vestiture*: Sparse, golden.

Female.—Unknown.

Type material.—Holotype ♂: COLOMBIA: Boyacá, Santuario de Flora y Fauna Iguaque, 5°25'N 73°27'W, 2,820 m, Malaise trap, 17 Mar.–1 Apr. 2000, P. Reina, No. M130 (BOGOTÁ). Paratypes: 18 ♂, 5 ♂, same data as holotype; 5 ♂, 2–19 Apr. 2000, No. M31; 8 ♂, 28 Feb.–17 Mar. 2000, No. M9 (BOGOTÁ, DAVIS).

Etymology.—The species is named for the sharp, noselike projection on the clypeus.

Discussion.—This is one of the three species (*acuminatus*, *nasalis* and *paradoxus*) with red coloration and a medial clypeal projection in the male. *Merithynnus nasalis* can be distinguished from *acuminatus* by the flat to concave apicomedial clypeal margin, versus medially lobate one in *acuminatus*. Both of these species have a slender, ligulate hypopygium; other *Merithynnus* have the hypopygium broader and more

horse hoof-like or parallel-sided. The male genitalia of *nasalis* are unusual. The paramere is short, less than twice as long as broad and bends ventrally. The ventral surface is concave. In addition, the paramere is apically bidentate, with the inner margin submedially bulging, marked by conspicuous row of pits. The aedeagus is short, with a heavily sclerotized dorsal lobe, and the apical strap has a small, membranous lateral lobe.

*Merithynnus osorioi* Kimsey  
(Figs. 9, 20, 30–31, 34, 44, 54)

*Merithynnus osorioi* Kimsey 1991:77. Holotype male: Venezuela: Yaracuy, La Puerta (GAINESVILLE).

Male.—Body length 16 mm. *Head* (Figs. 9, 20): Clypeus nearly impunctate apically, dorsally punctures contiguous to 0.5PD apart, with elongate medial truncation, truncation apex medially slightly emarginated, with acute lateral angles, sides strongly incurved; area between antennal socket and eye margin with punctures 0.5 PD apart; mandible slender, with elongate apical tooth, large subapical tooth and large subbasal angle on inner margin; vertex and frons punctures contiguous to 0.5 PD apart, smaller and sparser along lower eye margin; hindocellus 3 ocellar diameters from eye margin; flagellomere I 2.5× as long as broad; flagellomere II 3× as long as broad. *Mesosoma*: pronotum polished with tiny shallow punctures 2–4 PD apart; scutal punctures 0.5–2.0 PD apart; scutellum polished, punctures 2–5 PD apart; metanotum 3–4 PD apart, becoming denser laterally; propodeum finely shagreened, with sparse, shallow punctures (punctures 0.5–1.0 PD apart laterally), nearly impunctate medially; mesopleural punctures 0.5–1.0 PD apart. *Metasoma*: Finely shagreened, punctures 1–3 PD apart; hypopygium broadly rounded apically, laterally notched (Fig. 31). *Genital capsule* (Figs. 44, 54): Paramere abruptly narrowed apically, ventral margin deeply indented subapically; aedeagal shaft

short, with large ventral lobe before apical strap. *Color*: Black, with yellow markings; clypeus ventromedially yellow, mandible yellow medially; antennal lobe yellow; eye with two yellow spots on inner margin, one on posterior margin; vertex with short lateral yellow stripe; pronotum with transverse, yellow medial stripe, interrupted medially, with small yellow lateral spot; scutum and scutellum with small yellow medial and lateral spots; propodeum with comma-shaped yellow spot and lateral yellow spot; mesopleuron with three yellow spots; coxae with dorsal yellow spot; femora yellow ventrally; metasomal terga I–IV and sternum III each with small lateral yellow spot; wing membrane yellow-tinted, marginal cell darker than rest of wing; veins brown. *Vestiture*: Sparse and erect, silvery ventrally, becoming brown dorsally.

*Female*.—Body length 10 mm. *Head*: Mandible slender, edentate; frons polished, punctures 4–6 PD apart. *Mesosoma* (Fig. 30): Pronotal disk subquadrate, convex medially, without declivity before collar, anterolateral corners of disc elevated, with dorsal tuft of erect setae; propleuron convex in profile; propodeum with long dorsal surface, sharply declivous to posterior face, juncture marked by sharp thorn-like medial projection. *Metasoma*: Tergum VI pygidium coarsely, irregularly punctate, covered by long, erect, dense setae, apically 5-lobed, with shallow apicomedial lobe; sternum VI apical plate forming half circle, without dorsal emargination (Fig. 34). *Color*: Dark, reddish brown.

*Material examined*.—VENEZUELA: Yaracuy, La Puerta (only the type series was seen).

*Discussion*.—Males of *Merithynnus osorioi* most closely resemble those of *bogotanus* and *turbulentus*. In the males, *osorioi* can be distinguished from these species by the laterally acute apical projection (obtuse or forming a right angle in *bogotanus* and *turbulentus*) of the clypeus, finely shagreened propodeum and no yellow spot between the ocelli.

*Merithynnus paradoxus* Kimsey,  
new species

(Figs. 10, 13, 21, 32, 35, 45, 55)

*Male*.—Body length 10–17 mm. *Head* (Figs. 10, 21): Clypeus dorsally punctate and shagreened, ventrally polished and nearly impunctate, with acute medial projection, otherwise concave medially, produced apicomedially into narrow upturned, apically truncate lobe; frons and vertex shagreened, with coarse contiguous punctures; antennal lobes apically angulate; hindocellus 2.5 MOD from eye margin and 3 MOD from posterior head margin; mandible without subbasal tooth, with submedial angle on inner margin, broadest submedially; flagellomere I 3.5× as long as broad; flagellomere II 4× as long as broad; flagellomere IX 5× as long as broad. *Mesosoma*: Surfaces of pronotum, mesopleuron, scutum and propodeum shagreened, with dense contiguous punctures; scutellum and metanotum polished, with punctures 1–2 PD apart; forecoxa with long digitate apical lobe (Fig. 13); hindtrochanter subtriangular in profile, with angular apicoventral corner. *Metasoma*: Segments finely shagreened, with punctures 1–3 PD apart. *Genital capsule* (Figs. 45, 55): Paramere curved ventrally, parallel-sided, broadly rounded apically, with acute apicoventral tooth in lateral view, slender, with apical thumb-like lobe pointing toward midline in dorsal view; aedeagus with large, sclerotized dorsal lobe. *Color*: Black, with yellowish markings, face with two broadly separated yellow spots along inner eye margin and two along outer eye margin; one (sometimes two) yellow spots on antennal lobe, clypeus ventrally yellow; mandible with small medial yellow spot; pronotum with yellow stripe along posterior margin and small lateral spot; tegula with yellow spot; mesopleuron with oblique yellow stripe; coxae with dorsal yellow spot; scutum and scutellum each with small medial yellow spot; metanotum whitish medially; propodeum with slender, sublateral longitudinal



stripe; fore and midfemur black dorsally, becoming redder ventrally; trochanters blackish; rest of leg red; metasomal segments I–IV red, with yellow medially, segment I black dorsobasally; segment V black, with yellow lateral tergal spot; segments VI and VII black; wing membrane evenly yellow-tinted, veins yellowish brown. *Vestiture*: Pale golden ventrally, becoming dark brown on vertex and thoracic dorsum.

Female.—Body length 7–8 mm. *Head*: Mandible short, slender, edentate; frons coarsely dentate, punctures contiguous, becoming sparser toward vertex, with 2–4 long setae; scape ventrally with row of stout, erect setae. *Mesosoma* (Fig. 32): Pronotum with anterior collar nearly as long as elevated disk, disk anteriorly trilobate, medial lobe acute, punctures 1–5 PD apart; scutellum elevated, ovoid, with contiguous punctures; scutum and metanotum barely visible; propodeum without dorsal surface, dorsal half concave, ventral part slightly convex, with dense, long, erect setae. *Metasoma*: Tergum I abruptly declivous anteriorly, anterior surface with dense, erect, long setae, with transverse subapical row of pits; tergum II with transverse, U-shaped, submedial carina, followed by large transverse subapical ridge, coarsely sculptured between, posterior margin flared; terga III–V with transverse submedial punctate stripe, punctures contiguous to 1 PD apart, with subapical, broadly W-shaped transverse groove before flat, smooth apical rim; apical surface of tergum VI carina-edged, carina sharply angulate, with lateral brush of setae, apex bilobate, with submedial longitudinal row of setae (Fig. 35). *Color*: Yellowish brown to dark brown.

Type material.—Holotype ♂: COLOMBIA: Santuario de Flora y Fauna Iguaque, La Planada, 5°25'N 73°27'W, 2,850 m, P. Reina, Malaise trap, 28 Feb.–Mar. 2000, No. M6; Malaise trap (BOGOTÁ). Paratypes: 231 ♂, 4 ♀; same locality as holotype: 5 ♂, 19 Apr.–6 May 2000, No. M57; 5 ♂, 28 Feb.–Mar. 2000, No. M6; 5 ♂, 11

Oct.–1 Nov. 2000, No. M751; 5 ♂, 1–13 Nov. 2000, No. M827; 6 ♂, 28 Feb.–16 Mar. 2000, No. M40; 6 ♂, 9–23 Mar. 2001, No. M1513; 7 ♂, 2–19 Apr. 2000, No. M32; 7 ♂, 7–21 Jan. 2001, No. M1251; 5 ♂, 8–25 Jun. 2000, No. M189; 7 ♂ 21 Jan.–7 Feb. 2000, No. M1249; 6 ♂, 2–22 Aug. 2001, No. M2023; 5 ♂, 17 Aug.–1 Sep. 2000, No. M518; 5 ♂, 25 Jun.–13 Jul. 2000, No. M248; 7 ♂, 23 Sep.–11 Oct. 2000, No. M754; 6 ♂, 4–21 Dec. 2000, No. M1079; 6 ♂, 2–19 Apr. 2000, No. M28; 4 ♂, 28 Feb.–17 Mar. 2000, No. M7; 5 ♂, 13–30 Jul. 2000, No. M381; 5 ♂, 21 Dec.–7 Jan. 2001, No. M1070; 4 ♂, 1–23 Sep. 2000, No. 616; 6 ♂, 6–23 May 2000, No. M73; Boyacá, Cabaña, Mamarramos, 5°25'N 73°27'W, 2,855 m, Malaise trap: 1 ♂, 16 Mar.–1 Apr. 2000, M123; 1 ♂, 1–23 Sep. 2000, No. M614; 4 ♂, 16 Mar.–1 Apr. 2000, No. M124; 2 ♂ 1–19 Apr. 2000, No. M23; 2 ♂, 1–19 Apr. 2000, No. M24; 1 ♂, 21 Dec 2000–7 Jan. 2001, No. M1072; Boyacá, Cerro Pan de Azucar, 5°25'N 73°27'W, 3,300 m: 6 ♂, 16 Apr.–2 May 2001, No. M1739; 4 ♂, 1 ♀, 2–22 Aug. 2001, No. M2023; 5 ♂, 10–28 Jun. 2001, No. M1834; 5 ♂, 1 ♀, 18 Jul.–2 Aug. 2001, No. M1967; 7 ♂, 12 Sep.–13 Oct. 2001, No. M2197; 6 ♂, 28 Jun.–18 Jul. 2001, No. M1965; 7 ♂, 22 Aug.–12 Sep. 2001, No. M2067; 4 ♂, 18 May–10 Jun. 2001, No. M1767; 5 ♂, 27 Mar.–16 Apr. 2001, No. M1517; 9 ♂, 9–23 Mar. 2001, No. M1513; 6 ♂, 2–18 May 2001, No. M1754; Boyacá, 5°25'N 73°27'W, 2,820 m, Malaise trap: 6 ♂ 28 Feb.–17 Mar. 2000, No. 9; 1 ♂, 2 ♀ 17 Mar.–1 Apr. 2000, No. M126; 2 ♂, 17 Mar.–1 Apr. 2000, No. M130; 3 ♂, 16 Mar.–1 Apr. 2000, No. M128; 4 ♂, 2–19 Apr. 2000, No. M27; 6 ♂, 28 Feb.–16 Mar. 2000, No. M5; 4 ♂, 28 Feb.–17 Mar. 2000, No. M7; 5 ♂, 28 Feb.–17 Mar. 2000, No. M8; Norte de Santander Parque Nacional Natural, Tamá, El Arenal, 7°26'N 72°26'W, 1,250 m, Malaise trap, A. Cortes, M291: 2 ♂, 7–15 Aug. 1998; (BOGOTÁ, DAVIS).

Etymology.—The name, *paradoxus*, is Greek (masculine) for strange, paradoxical,

referring to the odd modifications of the clypeus and forecoxa.

Discussion.—The structure of the male clypeus and foreleg will immediately distinguish this species from all others in the genus. Otherwise it is one of three species, including *acuminatus* and *nasalis*, with reddish markings and a tooth-like medial projection on the clypeus. The female can be distinguished by the anteriorly trilobate pronotum, apically bilobate pygidium and dorsally concave propodeum.

*Merithynnus pecki* Kimsey  
(Figs. 11, 22, 36–37, 46, 56)

*Merithynnus pecki* Kimsey 1991:75. Holotype male; Venezuela: Mérida, El Valle, 15 km east Mérida (OTTAWA).

Male.—Body length 11–17 mm. *Head* (Figs. 11, 22): Clypeus flat apically, indented medially, with broad, medially emarginate apex, lateral angle of apex forming 90° to slightly obtuse angle, punctures 2–4 PD apart apically, becoming contiguous dorsally; antennal lobe flattened anteriorly, not strongly projecting above clypeal margin; frons and vertex with contiguous punctures; hindocellus 2.6–2.7 ocellar diameters from eye margin; flagellomere I 2.5× as long as broad; flagellomere II 3.5× as long as broad; flagellomere XI 5× as long as broad; mandible slender, with small subapical tooth, without subbasal angle, broadest subbasally. *Mesosoma*: Pronotum finely shagreened, densely punctate, punctures contiguous to 0.5 PD apart; scutal punctures 0.5–1.0 PD apart medially, becoming contiguous laterally; scutellar punctures 2–4 PD apart medially, becoming nearly contiguous laterally; metanotal punctures 1–2 PD apart; propodeum finely shagreened, punctures obscure, 1–2 PD apart; mesopleuron finely shagreened, punctures 0.5–1.0 PD apart. *Metasoma*: Integument finely shagreened, punctures 0.5–2.0 PD apart; hypopygium apically ovoid, dorsal surface smooth. *Genital capsule* (Figs. 46, 56): Paramere broadly rounded apically,

with small apicoventral tooth, outer surface markedly convex, ventral margin sinuous to lobed medially; aedeagus about half as long as paramere, without dorsal lobe, with ventral membranous lobes before apical strap. *Color*: Black, with yellow markings; clypeus ventrally yellow; mandible medially yellow, antennal lobe yellow, inner eye margin with yellow stripe extending to top of eye; lower posterior eye margin with large yellow spot; vertex with transverse yellow stripe, interrupted medially; pronotum with transverse medial yellow stripe and anterolateral yellow spot; scutum with two small yellow posteromedial spots and lateral yellow stripe; scutellum with two yellow medial spots and anterolateral yellow spot; metanotum medially yellow, with lateral yellow spot; propodeum with comma-shaped, sublateral yellow spot and anterolateral spot; mesopleuron with anterior U-shaped yellow spot and small ovoid posterior yellow spot; coxae with dorsal and ventral yellow spots; femora yellow ventrally; tarsi dark brown; metasomal tergum I with yellow basolateral spot and transverse subapical yellow stripe; sternum I with small lateral yellow spot; tergum II with transverse yellow submedial stripe; terga III–V and sternum II–IV with large lateral yellow spot; wing membrane yellow-tinted, veins yellowish brown. *Vestiture*: sparse, silvery.

Female.—Body length 8–9 mm. *Head*: Mandible long, slender, edentate; frons coarsely punctate, punctures large, 1–2 PD apart, with tiny punctures in interspaces, with 2–5 scattered long setae. *Mesosoma* (Fig. 37): Finely, densely shagreened; pronotum with anterior collar three-fourths as long as elevated disk, disk anteriorly bilobate, evenly convex, punctures 1–2 PD apart; scutellum elevated, about as long as broad, punctures 1–2 PD apart; propodeum with dorsal surface longer than scutellum, deeply concave posteromedially. *Metasoma*: Finely, densely shagreened; tergum I narrowed anteriorly, subconical, declivous anteriorly, anterior surface with dense, erect

setae, with transverse indented, subapical row of pits; tergum II with transverse, U-shaped submedial carina, followed by large transverse subapical ridge, coarsely sculptured between, posterior margin flared; terga III–V each with transverse submedial punctate stripe, punctures contiguous to 1 PD apart, with subapical broadly W-shaped transverse groove before flat, smooth apical rim; apical surface of tergum VI carina-edged, posteriorly coarsely and irregularly punctate, with submedial longitudinal row of setae, marginal carina sharply angulate, with lateral brush of setae, apex with large triangular medial projection, with adjacent tuft of setae (Fig. 36). *Color*: Yellowish brown to dark brown.

Material examined.—50 ♂, 5 ♀: VENEZUELA: Mérida, El Valle, 15 km e Mérida; Tabay Mucuy; S. Truchicola; 20 km se Azulita; La Carbonera, Campo Elias; 19 km nw Las Cruces (BUENOS AIRES, CAMBRIDGE, OTTAWA, DAVIS).

Discussion.—The most distinctive feature of *pecki* is the broad, apically flattened and bilobate male clypeus. The female can be distinguished by the nearly flat propleura and pygidial plate with a large, single apical projection.

*Merithynnus turbulentus* (Turner)  
(Figs. 12, 23, 47, 57)

*Scotaena turbulentus* Turner 1908:71. Holotype male; Venezuela: Caracas (OXFORD).

Male.—Body length 12–13 mm. *Head* (Figs. 12, 23): Clypeus nearly impunctate, conspicuously produced apicomediaally, with apex sharply bidentate, concave medially; area between antennal socket and eye margin with small punctures 0.5–1.0 PD apart; frons and vertex with punctures 0.5 PD apart; hindocellus 4 ocellar diameters from eye margin; antennal lobe rounded; flagellomeres I–II 3.5× as long as broad; flagellomere XI 6.5× as long as broad; mandible with long acute apical tooth, subapical notch medially and subbasally an-

gulate, broadest submedially. *Mesosoma*: Pronotum polished, nearly impunctate; scutum polished, punctures 1–2 PD apart medially, 0.5–1.0 PD apart laterally; scutellum impunctate medially, laterally and anteriorly punctures 1–2 PD apart; metanotum impunctate; propodeum polished, with small punctures 3–4 PD apart laterally, nearly impunctate medially above petiolar socket; mesopleuron polished, punctures 1–2 PD apart. *Metasoma*: Integument densely, finely shagreened, punctures shallow, 2–4 PD apart; hypopygium apically broadly rounded, with dorsal surface irregularly, transversely wrinkled. *Genital capsule* (Figs. 47, 57): Paramere slender, elongate and tapering apically in lateral view, elongate and apically spoon-shaped in dorsal view; aedeagus without dorsal lobe, less than half as long as paramere. *Color*: black, with yellow markings; clypeus yellow ventrally, inner eye margin with yellow stripe extending to hindocellus, interrupted medially; antennal lobe yellow, mandible yellow medially, posterior eye margin with yellow stripe along lower three-fourths, attached medially to transverse yellow stripe traversing vertex; pronotum with transverse medial yellow stripe, interrupted medially and large lateral yellow spot, scutum with posteromedial yellow spot and yellow lateral stripe, scutellum with two large medial and lateral yellow spots, metanotum yellow medially and laterally, propodeum with large comma-shaped yellow sublateral and dorsolateral spots; forecoxa anteriorly yellow, mid and hindcoxae each with small dorsal and ventral yellow spots; femora with yellow ventral stripe, rest of legs black; metasomal terga I–IV with small, lateral yellow spot, sterna II–IV with small lateral yellow spots; wing membrane yellow-tinted, veins brown. *Vestiture*: Silvery.

Female.—unknown.

Material examined.—2 ♂: VENEZUELA: Caracas (holotype); COLOMBIA: Valle, Peñas Blancas, Feb. 1975 (DAVIS, OXFORD).

Discussion.—Male *turbulentus* most

closely resemble male *bogotanus* and can be distinguished from that species by the darkly stained forewing marginal cell, the clypeus with the apical projection straight-sided (not rounded or convex as in *bogotanus*), and the yellow stripe along the inner eye margin not reaching beyond the ocelli.

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